

## **CLAIMS**

1. A camera system for supervision of an exterior environment applicable to a motor vehicle rear view mirror, said camera being adapted for detecting the presence of objects susceptible to collide with said vehicle, in a determined supervisory field, covering at least one dead angle, said system being of the type including a device suitable to acquire images picked up from the exterior and at least one system for processing and analyzing the signals obtained by the camera, comprising at least two electrically interconnected and communicated modules:

a) a first module (12) which comprises an electro-optical detecting device, and

b) a second module acting as vehicle and/or user interface, distanced from the previous one, foreseeing at least one filtration unit associated with said two modules as a whole, and operating the components of said two modules at, at least, two different voltage levels.

2. The camera system, according to claim 1, wherein said first module (12) comprises at least processing means.

3. The camera system, according to claim 2, wherein said second module is itself divided into two interconnected submodules:

b.1) a first submodule (7), distanced from said first module, which comprises at least one regulating circuit (9), and

b.2) a second supply submodule (3), acting also as vehicle and/or user interface, distanced from the previous one.

4. The camera system, according to claim 1, wherein said electro-optical detecting device is of C-MOS technology.

5. The camera system, according to claim 3, wherein said processing means comprises a processor and memories.

6. The camera system, according to claim 5, wherein said first module (12) comprises at least one filter (13), the mentioned first submodule (7) comprises one or more filters (8, 10) and said second submodule (3) comprises one or more filters (1, 5).

7. The camera system, according to claim 6, wherein said filter (13) of the first module (12) is one, the mentioned one or more filters (8, 10) of the first submodule (7) are two and said one or more filters (1, 5) of the second submodule are two.

5 8. The camera system, according to claim 7, wherein the second submodule (3) comprises at least one regulating circuit (4), one control circuit, one amplification circuit and one communication circuit applied to the management and treatment of data offered by the first module (12), passing through the first submodule (7).

9. The camera system, according to claim 1, wherein said first module (12) is incorporated in a compact casing (14), susceptible to be inserted in a reduced housing, as in  
10 the interior of a support structure of a rear view mirror.

10. The camera system, according to claim 9, wherein said casing (14) has a protruding tubular sector (17) which houses a lens (15) or optical system located on a detecting matrix of the electro-optical detecting device, in order to appropriately focus the images to be picked up.

15 11. The camera system, according to claim 10, wherein said protruding tubular sector (17) of the casing (14) houses, near by said lens (15) or optical system, a conditioning element (18) for conditioning the transparency conditions of the mentioned lens.

12. The camera system, according to claim 11, wherein said casing (14) is metallic and water-proof.

20 13. The camera system, according to claim 11, wherein said conditioning element (18) for conditioning the transparency conditions of the lens, is an electrical heater.

14. The camera system, according to claim 3, wherein said first submodule (7) is connected to said second submodule (3) through multicore wiring means (24), as a cabling or flat cable, with bidirectional signals flow, through a connector (23), a part (23a) of which is  
25 integrated in a connector casing (24), and the second submodule (3) is provided with a connector (19) susceptible to be connected to the supply of a motor vehicle.

15. The camera system, according to claim 6, wherein said electro-optical detecting device and said processor of the first module (12) are associated with an application-specific integrated circuit (A.S.I.C.) (16).

16. The camera system, according to claim 6, wherein said filter (13) of the first module (12) is responsible for the filtration of entry voltages to the first module (12) coming from the first submodule (7).

5 17. The camera system, according to claim 14, wherein said circuits of the first submodule (7) are located on a rigid multilayer printed circuit board (PCB) (22), which is integrated within the mentioned connector casing (24), united to the first module (12) through a flexible multilayer printed circuit, which provides for a bidirectional signals pass.

10 18. The camera system, according to claim 15, wherein said memories, said filters (13) and said A.S.I.C. (16) of the first module (12) are located on two rigid multilayer printed circuit boards (PCB) (20, 21), located in parallel and interconnected by a flexible multilayer printed circuit (11), folded and providing for a bidirectional signals pass.

15 19. The camera system, according to claim 7, wherein in the first submodule (7), one of both filters (8) is of entry type and responsible for the filtration of voltages coming from the second submodule (3) and one of both filters (10) is of exit type and responsible for the filtration of one or more voltages coming from said regulating circuit (9), applied to the regulation of a voltage coming from the entry filter (8).

20 20. The camera system, according to claim 8, wherein in the second supply submodule (3), one of both filters (1) is of entry type and responsible for the filtration of voltages coming from a battery located in the interior of the motor vehicle and one of both filters (5) is of exit type and responsible for the filtration of voltages coming from said regulating circuit (4), which is applied to the regulation of a voltage coming from the mentioned entry filter (1).

21. The camera system, according to claim 16, 19 or 20 wherein said voltages are of direct type.

25 22. The camera system, according to claim 20, wherein said regulating circuits (4 and 9) are of lineal type.

23. The camera system, according to claim 20, wherein said regulating circuits (4 and 9) are of switched type.

30 24. The camera system, according to claim 20, wherein said regulating circuits (4 and 9) are two.

25. The camera system, according to claim 7, wherein said filters (1, 5, 8, 10 and 13) are arranged in different stages.

26. The camera system, according to claim 1, wherein said electro-optical detecting device is an analogue camera.

5 27. The camera system, according to claim 26, wherein said camera disposes of a conditioning element (18) for conditioning the transparency conditions of a lens integrated therein.